SE Program

Software Testing

When following the fundamental test process, when should the test control 1. activity take place?

- a. During the planning activities
- b. During the implementation and execution activities
- c. During the monitoring activities

d. During all the activities

2. Designing and prioritizing high level test cases occurs during which activity in the fundamental test process?

a. Test planning

b. Test analysis and design

- c. Test implementation and execution
- d. Evaluating exit criteria

3. Usability testing is an example of which type of testing?

a. Functional

b. Non-functional

- c. Structural
- d. Change-related

In a formal review, which role is normally responsible for documenting all the 4. open issues?

- a. The moderator
- b. The author
- c. The scribe
- d. The manager

Which of the following is a type of issue that is best found in static analysis? 5.

- a. An inaccurate formula
- b. A memory leak

c. A piece of dead code

d. A problem with the code not matching the requirements

6. If test cases are derived from looking at the code, what type of test design technique is being used?

- a. Black-box
- b. White-box
- c. Specification-based
- d. Behavior-based

7. You are testing a machine that scores exam papers and assigns grades. Based on the score achieved the grades are as follows: 1-49 = F, 50-59 = D-, 60-69 = D, 70-79 = C, 80-89 = B, 90-100=A

If you apply boundary value analysis, how many test cases will you need to

achieve minimum test coverage?

a. 8

b. 10

c. 12

<mark>d. 14</mark>

8. Which of the following is a task that a test leader would be expected to do?

a. Write a test strategy

b. Set up a test environment

c. Prepare test data

d. Automate tests

9. Which of the following is a true statement about exhaustive testing?

a. It is a form of stress testing

b. It is not feasible except in the case of trivial software

c. It is commonly done with test automation

d. It is normally the responsibility of the developer during unit testing

10. Which document specifies the inputs and outputs for a test?

a. Test design specification

b. Test case specification

c. Test procedure specification

d. Test plan

11. Consider the following high level program design and assume you can provide the values for today, A, B and C:

```
Start;
Do until B = C
If today = Monday
set A = 1
elseif today = Wednesday
Set A = 2
Set B = C
Endif;
If B < C
B = B + 1
Endif;
Endloop;
End;
```

Which of the following sets of values will achieve 100% decision coverage with the least number of test cases (the order of the values is today, A, B, C)? a. Monday, 1, 3, 3; Monday 3, 2, 4; Wednesday, 1, 2, 3; Tuesday, 5, 4, 3

b. Monday, 1, 2, 4; Wednesday 1, 2, 4

c. Monday, 5, 1, 1; Tuesday, 5, 1, 2; Wednesday, 5, 1, 2

d. Monday, 5, 3, 2; Monday, 5, 1, 1; Monday 5, 2, 3; Tuesday, 4, 4, 3; Wednesday, 1, 2, 3

12. Order numbers on a stock control system can range between 10000 and 99999 inclusive. Which of the following inputs might be a result of designing tests for only valid equivalence classes and valid boundaries:

a) 1000, 5000, 99999 b) 9999, 50000, 100000

Software design methodology

1-Which of the following statement is FALSE about design key issues?

- A) Persistence of data is one of design key issues
- B) Distribution is one of design key issues
- C) Design methods are one of design key issues
- D) All of the above

2-Which of the following statement is FALSE about design activity?

- A) Design activity produces a solution to a problem
- B) Design activity doesn't have one systematic way
- C) Design activity produces a specification document
- D) None of the above

3-Which of the following statement is FALSE about design viewpoints?

- A) Design has behavioral viewpoints
- B) Design has structural viewpoints
- C) Design has functional viewpoints
- D) None of the above

4) Which of the following statement is TRUE about software architecture?

A) Architecture produces the first design artifact

- B) Architecture produces the second design artifact
- C) Architecture produces the third design artifact
- D) None of the above
- E) All of the above

5) Which of the following statement is TRUE about system architecture?

- A) System architecture affects the performance
- B) System architecture affects the availability
- C) System architecture affects the security

D) All of the above

E) None of the above

Data Base Administration

1) Which of the following table space holds the data dictionary:

- a) INDX
- b) USERS
- c) SYSTEM

d) TEMP

2) A tablespace can be dropped even if it contains data by including the following option:
a) DROP ALL DATA
b) ON CASCADE
c) WITH OBJECTS
d) INCLUDING CONTENTS

3) Deadlock happens when

- a) Two trans reading the same data items
- b) Two trans writing the same data items
- c) Two trans waiting for each other to unlock data items
- d) Two trans run simultaneously
- e) None of the above
- 4) The following is not a property of a transaction
 - a) Atomicity
 - b) Durability
 - c) Redoing
 - d) Isolation
 - e) Consistency

5) What keyword must be included in a DROP USER statement if you want to drop a user that owns objects?

a) ALL

b) DELETE CONSTRAINTS

c) BYPASSING REFERENTIAL INTEGRITY

d) CASCADE

6) The two types of Oracle Server privileges are:

a) Table and DBA

b) Item and system

c) Object and DBA

d) Object and system

7) To grant object privileges for objects you do not own, you must have the privileges with the following option:

a) CASCADE

b) ADMIN

<mark>c) GRANT</mark>

d) EXTERNAL

8) Recovery means that

- a) The database can be restored to operation after database damage and failure.
- b) The mechanism used to insure the separation of concurrent activities
- c) The database provides an access control for authorized users
- d) Certain rules to be preserved in the database data.
- 9) A view is
 - a) A subset of the database, presented to one user or set of users
 - b) A set of files interrelated to each other
 - c) A set of relations in a relational database

- d) None of the above
- 10) One of the following is a benefit of database views:
 - a) Reducing security on the data
 - b) Increasing complexity of user perspective on the data
 - c) Customize the appearance of the database
 - d) Violate program-data independence
- 11) Concurrency in DBMS means
 - a) The restoration of the databases after any type of failure
 - b) More than one user can access the same data items at the same time.
 - c) More than one user can change the same data item at the same time.
 - d) No more than one user can access the same data items at the same time.
- 12) Software that defines a database, stores the data, supports a query language, produces reports and creates data entry screens is a:

A) data dictionary

B) database management system (DBMS)

- C) decision support system
- D) relational database
- 13) The separation of the data definition from the program is known as:
 - A) data dictionary

B) data independence

- C) data integrity
- D) referential integrity

14) In the client / server model, the database:

- A) is downloaded to the client upon request
- B) is shared by both the client and server
- C) resides on the client side

D) resides on the server side

- 15) The traditional storage of data that is organized by customer, stored in separate folders in filing cabinets is an example of what type of 'database' system?
 - A) Hierarchical
 - B) Network
 - C) Object oriented
 - D) Relational
- 16) The database design that consists of multiple tables that are linked together through matching data stored in each table is called a:
 - A) Hierarchical database
 - B) Network database

C) Object oriented database

D) Relational database

Quality management and Process improvement

1. The three major differences between software products and other industrial products are:

- a. Product complexity
- b. Product visibility
- c. Development and production process
- d. All of the mentioned

2. What are the main software system components the software quality system focus on?

- a. Computer programs (the "code")
- b. Procedures
- c. Documentation
- d. Data necessary for operating the software system.
- e. All of the mentioned

3. It is claimed that no significant SQA activities are expected to take place during the phase of production planning for software products.

- a. True
- b. <mark>False</mark>

4. A software error can be a grammatical or logical error in trying to comply with one or more of the client's requirements included in one or more of the code lines.

- a<mark>) True</mark>
- b) False

5- Software quality is not easy to promise because software is invisible

<mark>True</mark> False

6- Opportunities to detect defects ("bugs") are not limited to the product development

- phase
 - True False

7- Which of the following statement is TRUE about when a software fault become a failure

- A) A software fault become a failure when it is activated
- B) A software fault become a failure when it is deactivated
- C) A software fault become a failure when it is corrected
- D) All of the above

8- Which of the following statement is FALSE about prevention costs

- A) Quality planning and test equipment
- B) Formal technical reviews
- C) Failure mode analysis and repair
- D) All of the above

9- Which of the following statement is TRUE about performance quality

A) <u>Performance quality means; the software deliver all content, functions, and features that</u> are specified as part of the requirements model B) Performance quality means; the software deliver all features and capability without failure

C) Performance quality means; the software provide features that surprise and delight first-time end-users

D) All of the above

Requirements Engineering

1. During project blastoff, the intent of the tasks is to determine

- a. Purpose of the project
- b. Functional and non-functional requirements
- c. Provide details to make go/no go decision.

d. A and C

2. What are the types of requirements?

- a) Availability
- b) Reliability
- c) Usability
- d) Flexibility
- e) All of the mentioned

3. What are the Scenarios?

a) Scenarios are real-life examples of how a system can be used.

b) The requirements which can change during development or when the system is in use

- c) Change management
- d) B and C.
- e) All statements are false.

4. Problems of requirements analysis

a) Stakeholders don't know what they really want.

b) Stakeholders express requirements in their own terms and different stakeholders may have conflicting requirements.

c) Organizational and political factors may influence the system requirements.

d) The requirements change during the analysis process. New stakeholders may emerge and the business environment change.

e) All statements are true

5. At the end of project blastoff meetings a detailed list of functional and nonfunctional requirements is produced :

a. True

b. <mark>False</mark>

6. A Use-case actor is always a person having a role that different people may play.

a) True

b) <mark>False</mark>

Computer Organization and Architecture

- 1. Which of the following register points to the address of next instruction to be executed
 - a) <mark>IP register</mark>
 - b) BX register
 - c) SP register
 - d) AX register

2. Which of the following defines a constant Max

- (a) Max db 80
- (b) <mark>Max equ 80</mark>
- (c) Max dw 80
- (d) mov Max, 80

3. The effect of the following code

mov Ah,1 int 21h

is to

- (a) read a character into AL
- (b) read a character into DL
- (c) display the character in AL
- (d) display the character in DL
- 4. The physical address is (10350 h) and the content of (IP= 350 h) , The content of CS will be
 - a) 10000 h
- b) 3A67h
- c) <mark>1000h</mark>
- d) 650h

5. The Program that write by a programmer contains:

- a) Data Segment and Code Segments Only.
- b) Stack Segment and Data segments Only.
- c) Stack and Code Segments.
- d) stack segment only

6. The Maximum numbers of bytes allowed for the programmer to be written in one code segment is:

- a) 128 Kbyte
- b) 32 Kbyte
- c) 256 Kbyte
- d<mark>) 64 Kbyte</mark>

7. State which of the following buses is unidirectional

- a) data bus
- b) control bus
- c) address bus
- d) data + control

8. which of the following register can be divided into two half's

a) CS b) IP c) SP <mark>d) Bx</mark>

9. Which of the following an 8086 instruction clear the content of Ax?

a) Mov Ax, 1 b) ADD Ax, Ax c) <mark>Xor Ax,Ax</mark> d) Or Ax, Ax

10. Which of the following an 8086 instruction clear the MSB of Ax ?

a) Or Ax, 7FFFh b) Test Ax, 7FFFh c) Sub Ax, 7FFFh d) AND Ax, 7FFFh

Numerical Analysis

1. The second Taylor polynomial for $f(x) = e^x \cos x$ about $x_0 = 0$ is					
a.	$P_2(x) = 1 + x$	с.	$P_2(x) = 1 + 2x$		
b.	$P_2(x) = 1 + x^2$	d.	$P_2(x) = 1 + 2x^2$		

2.	Using three-digit rounding arithmetic $\frac{\frac{13}{14} - \frac{6}{7}}{2e - 5.4}$ i	s equal:	
a.	1.00	с.	2.20
b.	1.80	d.	1.90

3. The first iteration P_1 to approximate $\sqrt{3}$ using the fixed-point iteration with

$g(x) = 0.5 \left[x + \frac{5}{x} \right]$ and $P_0 = 1.0$ is:	
a. 1 <mark>c.</mark>	2
b. 3 d.	4

4. For a function *f* the forward divided-differences are given by:

		,
	$f[x_0]$	$x_0 = 0$

	$f[x_0, x_1]$		
$f[x_0, x_1, x_2] = \frac{50}{7}$		$f[x_1]$	$x_1 = 0.4$
	$f[x_1, x_2] = 10$		
		$f[x_2] = 6$	$x_2 = 0.7$

The missing entries in the table are:

a. $f[x_0]=1, f[x_1]=3 \text{ and } f[x_0, x_1]=5$ c. $f[x_0]=0.1, f[x_1]=0.3 \text{ and } f[x_0, x_1]$ =0.5 $f[x_0]=2, f[x_1]=4 \text{ and } f[x_0, x_1]=6$ d. $f[x_0] = 0.2, f[x_1] = 0.4$ and $f[x_0, x_1]$ b. =0.6

5.	Using	three-	point	formula	and the	e following	table
\sim .	Comg	un co	point	ronnana	und un		, tuoie

<u> </u>		U		
1.4	1.3	1.2	1.1	x
16.44465	13.46374	11.02318	9.025013	f(x)

the appr	coximate value of $f'(1.2) =$		
a.	22.012354	с.	21.548120
b.	20.245874	d.	22.193635

6. U	sing the two-po	bint formula to approximate $f'(1.8)$ for $f(x) = \ln x$	with $h = 0.1$ is:
a.	0.5406722	с.	0.4574854
b.	0.3548725	d.	0.2654874

υ.	0.5540725	ŭ	. 0	1.203407-
		1.5		
7. Usin	g the Trapezoidal rule, the approximate value of	$\int x^2 dx$ is:		

		1		
a.	0.325487		с.	0.154872
b.	0.228074		d.	0.451230

1.5 8. Using Simpson's rule, the approximate value to $\int x^2 \ln x dx$ is:

a.	0.165432	c.	0.182541
b.	0.175412	d.	0.192245

9. The number π has an infinite decimal expansion of the form $\pi = 3.14159265...$, the fivedigit rounding of π is:

a.	0.31415	с.	3.1415
b.	0.31416	d.	3.1416

10. If $p = 0.3000 \times 10^{1}$ and the approximate value of p is $p^{*} = 0.3100 \times 10^{1}$. Then the absolute error is: